

WHAT IS CLAIMED IS:

- 1 1. A method of receiving a signal using an integrated circuit, the integrated
2 circuit comprising a signal path including a low-noise amplifier configured to receive the signal,
3 a mixer having an input coupled to an output of the low-noise amplifier, and a low-pass filter
4 having an input coupled to an output of the mixer, the method comprising:
5 determining a first signal strength at a first node in the signal path in the
6 integrated circuit; and
7 dynamically changing an impedance of a component in the signal path based on
8 the first signal strength.
- 1 2. The method of claim 1 wherein the signal comprises a preamble portion
2 and a data portion, the impedance of a component is changed while receiving the preamble
3 portion, and the method further comprises receiving the data portion of the signal.
- 1 3. The method of claim 2 further comprising:
2 determining a second signal strength at a second node in the signal path, wherein
3 the second node in the signal path is after the first node in the signal path.
- 1 4. The method of claim 3 wherein the impedance of the component in the
2 signal path is also changed based on the second signal strength.
- 1 5. The method of claim 2 wherein the component in the signal path
2 comprises a MOS transistor.
- 1 6. The method of claim 2 wherein the component in the signal path
2 comprises a resistor.
- 1 7. The method of claim 2 wherein the component in the signal path
2 comprises a capacitor.
- 1 8. The method of claim 4 wherein the component in the signal path is
2 included in the mixer.

1 9. The method of claim 4 wherein the component in the signal path is
2 included in the low-pass filter.

1 10. A method of receiving a signal comprising a preamble portion and a data
2 portion using an integrated circuit, the integrated circuit comprising a signal path including a
3 low-noise amplifier configured to receive the signal, a mixer having an input coupled to an
4 output of the low-noise amplifier, and a low-pass filter having an input coupled to an output of
5 the mixer, the method comprising:

6 determining a first signal strength at a first node in the signal path in the
7 integrated circuit; and

8 while receiving the preamble portion of the signal, dynamically changing a bias
9 current in the signal path based on the first signal strength.

1 11. The method of claim 10 wherein the method further comprises receiving
2 the data portion of the signal.

1 12. The method of claim 11 further comprising:

2 determining a second signal strength at a second node in the signal path, wherein
3 the second node in the signal path is after the first node in the signal path.

1 13. The method of claim 12 wherein the bias current in the signal path is also
2 changed based on the second signal strength.

1 14. The method of claim 11 wherein the bias current is a bias current for the
2 low-noise amplifier.

1 15. The method of claim 11 wherein the bias current is a bias current for the
2 mixer.

1 16. The method of claim 11 wherein the bias current is a bias current for the
2 low-pass filter.

1 17. A method of receiving a signal using an integrated circuit, the integrated
2 circuit comprising a signal path including a first circuit and a second circuit having an input
3 coupled to an output of the first circuit, the method comprising:

4 determining a first signal strength at a first node in the signal path in the
5 integrated circuit, wherein the first node is before the first circuit in the signal path;

6 dynamically changing a gain of the first circuit based on the first signal strength;

7 and

8 dynamically changing an impedance of a component in the second circuit based
9 on the first signal strength.

1 18. The method of claim 17 wherein the signal comprises a preamble portion
2 and a data portion, the gain and impedance are changed while receiving the preamble portion,
3 and the method further comprises receiving the data portion of the signal.

1 19. The method of claim 18 further comprising:

2 determining a second signal strength at a second node in the signal path, wherein
3 the second node in the signal path is after the second circuit in the signal path.

1 20. The method of claim 19 wherein the gain of the first circuit and
2 impedance of the component in the second circuit is also changed based on the second signal
3 strength.

1 21. The method of claim 18 wherein the first circuit is a low-noise amplifier.

1 22. The method of claim 18 wherein the first circuit is a mixer.

1 23. A wireless transceiver integrated circuit comprising:

2 a receiver comprising a signal path, the signal path comprising:

3 a low-noise amplifier;

4 a mixer having an input coupled to an output of the low-noise amplifier;

5 and

6 a low-pass filter having an input coupled to an output of the mixer; and

7 a first signal strength indicator circuit coupled to the signal path, and configured
8 to determine a first signal strength;
9 wherein an impedance in the signal path is configured to be dynamically adjusted
10 in response to the first signal strength.

1 24. The wireless transceiver of claim 23 further comprising:
2 a second signal strength indicator circuit coupled to the output of the mixer, and
3 configured to determine a second signal strength,
4 wherein the first signal strength indicator is coupled to the output of the low-noise
5 amplifier, and
6 wherein the impedance in the signal path is configured to be adjusted in response
7 to the first and second signal strengths.

1 25. The wireless transceiver of claim 23 further comprising:
2 a second signal strength indicator circuit coupled to the output of the low-pass
3 filter, and configured to determine a second signal strength,
4 wherein the first signal strength indicator is coupled to the output of the mixer,
5 and
6 wherein the impedance in the signal path is configured to be adjusted in response
7 to the first and second signal strengths.

1 26. A wireless transceiver integrated circuit comprising:
2 a receiver comprising a signal path, the signal path comprising:
3 a low-noise amplifier;
4 a mixer having an input coupled to an output of the low-noise amplifier;
5 and
6 a low-pass filter having an input coupled to an output of the mixer; and
7 a first signal strength indicator circuit coupled to the signal path, and configured
8 to determine a first signal strength, the first signal strength the strength of a signal comprising a
9 preamble portion and a data portion;
10 wherein a bias current in the signal path is configured to be dynamically adjusted
11 during the preamble portion of the signal in response to the first signal strength.

1 27. The wireless transceiver of claim 26 further comprising:
2 a second signal strength indicator circuit coupled to the output of the mixer, and
3 configured to determine a second signal strength,
4 wherein the first signal strength indicator is coupled to the output of the low-noise
5 amplifier, and
6 wherein the bias current in the signal path is configured to be adjusted in response
7 to the first and second signal strengths.

1 28. The wireless transceiver of claim 26 further comprising:
2 a second signal strength indicator circuit coupled to the output of the low-pass
3 filter, and configured to determine a second signal strength,
4 wherein the first signal strength indicator is coupled to the output of the mixer,
5 and
6 wherein the bias current in the signal path is configured to be adjusted in response
7 to the first and second signal strengths.

1 29. A wireless transceiver integrated circuit comprising:
2 a receiver comprising a signal path, the signal path comprising:
3 a first circuit; and
4 a second circuit having an input coupled to an output of the first circuit;
5 and
6 a first signal strength indicator circuit coupled to the signal path, and configured
7 to determine a first signal strength;
8 wherein a gain of the first circuit is configured to be dynamically adjusted in
9 response to the first signal strength, and
10 wherein an impedance in the second circuit is configured to be dynamically
11 adjusted in response to the first signal strength.

1 30. The wireless transceiver of claim 29 further comprising:
2 a transmitter comprising:
3 a power amplifier; and
4 an output-level-sensing circuit coupled to an output of the power amplifier,

5 wherein the output-level-sensing circuit is configured to dynamically adjust a gain
6 of the power amplifier.